

Notice of Allowability

Application No.

10/805,948

Examiner

Jeffrey L. Sterrett

Applicant(s)

HSU ET AL.

Art Unit

2838

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☐ This communication is responsive to ____.
2. ☒ The allowed claim(s) is/are 1-20.
3. ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some* c) ☐ None of the:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. ____.
3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

* Certified copies not received: ____.

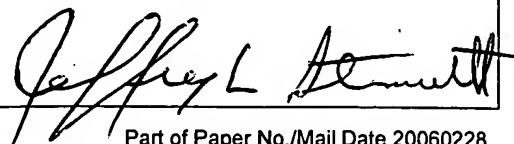
Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.
THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.

4. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.
5. ☐ CORRECTED DRAWINGS (as "replacement sheets") must be submitted.
- (a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review (PTO-948) attached
- 1) ☐ hereto or 2) ☐ to Paper No./Mail Date ____.
- (b) ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date ____.
- Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).
6. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

Attachment(s)

1. ☒ Notice of References Cited (PTO-892)
2. ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3. ☐ Information Disclosure Statements (PTO-1449 or PTO/SB/08), Paper No./Mail Date ____
4. ☐ Examiner's Comment Regarding Requirement for Deposit of Biological Material
5. ☐ Notice of Informal Patent Application (PTO-152)
6. ☐ Interview Summary (PTO-413), Paper No./Mail Date ____
7. ☐ Examiner's Amendment/Comment
8. ☒ Examiner's Statement of Reasons for Allowance
9. ☐ Other ____.

Jeffrey Sterrett
Primary Examiner



REASONS FOR ALLOWANCE

The claimed invention of a synchronized parallel power converter is found to be allowable over the prior art since a synchronized parallel power converter system comprising a single phase pulse width modulator providing first and second pulse outputs; a first converter having a first pulse port receiving the first pulse output, a second pulse port receiving the second pulse output, and a current output; and a second power converter having a first pulse port receiving the first pulse output, a second pulse port receiving the second pulse output, and a current output connected to the current output of the first power converter so that the first and second power converters provide equal output currents as recited by claims 1-7 was not found to be singularly or collectively taught by the prior art.

The claimed invention of a synchronized parallel power converter is found to be allowable over the prior art since a synchronized parallel power converter system comprising a double phase pulse width modulator providing first, second, third, and fourth pulse outputs; a first converter having a first pulse port receiving the first pulse output, a second pulse port receiving the second pulse output, and a current output; a second power converter having a first pulse port receiving the first pulse output, a second pulse port receiving the second pulse output, and a current output connected to the current output of the first power converter; a third power converter having a first pulse port receiving the first pulse output, a second pulse port receiving the second pulse output, and a current output connected to the current output of the first power converter; and a fourth power converter having a first pulse port receiving the first pulse output, a second pulse port receiving the second pulse output, and a current output connected to the current output of the first power converter so that the four power

converters provide equal output currents as recited by claims 8-20 was not found to be singularly or collectively taught by the prior art.

Kates et al (US 5,973,485) is cited to show a synchronized parallel power converter system (100) comprising a pulse width modulator (102) providing a single pulse output (P), N converters (106-114) each having a first pulse port receiving the pulse output and a second pulse port receiving a second pulse (ENn), and a current output so that the N power converters provide equal output currents.

Nguyen et al (US 6,043,634), Wickersham et al (US 6,362,607), Ashburn et al (US 6,362,608), Markowski et al (US 6,696,882), Ostojic (US 6,771,052), Isham (US 6,977,489), and Harris et al (US 7,002,325) are cited to show synchronized parallel power converter systems as exemplified by Markowski et al comprising a pulse width modulator (14) providing individual pulse outputs (PWMa-PWMd) to N converters (30a-30d) each having a first pulse port receiving the respective pulse output, and a current output so that the N power converters provide equal output currents.

Martinez (US 6,023,154), Varga (US 6,150,803), Kociecki (US 6,198,642), Tressler et al (US 6,281,666), Brooks et al (US 6,285,571), Clarkin et al (US 6,465,993), Brooks (US 6,605,931), Muratov et al (US 6,850,045), and Uematsu et al (US 7,002,324) are cited to show synchronized parallel power converter systems as exemplified by Uematsu et al comprising a pulse width modulator (40) providing individual switch pulse outputs (S11-S22) to N converters (10 and 20) each having two pulse ports receiving the respective individual switch pulse outputs, and a current output so that the N power converters provide equal output currents.

Lee et al (US 5,808,453), Passoni et al (US 6,346,798), Lethellier (US 6,424,129), Hobrecht et al (US 6,674,274), and Perry (US 6,768,658) are cited to show

synchronized parallel power converter systems comprising plural pulse width modulators like prior art figure 2.

Any comments considered necessary by applicant must be submitted no later than the payment of the Issue Fee and, to avoid processing delays, should preferably accompany the Issue Fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jeffrey L. Sterrett whose telephone number is (571) 272-2085. The examiner can normally be reached on Monday-Thursday & 8:00am-5:00pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Karl D. Easthom can be reached on (571) 272-1989. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

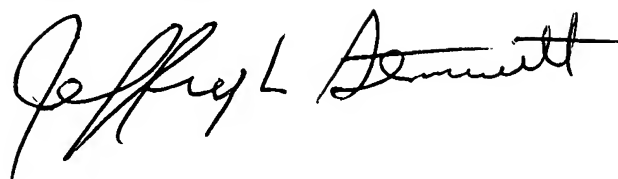
Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Jeffrey L. Sterrett

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Primary Examiner
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A handwritten signature in black ink, reading "Jeffrey L. Bennett". The signature is written in a cursive style with a large, stylized "J" and a long horizontal line extending from the end of the name.